



# GV-SNVR System

*User's Manual*





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## Chapter 1 Introduction

The GV-SNVR0400F / GV-SNVR1600 is a Linux-embedded Standalone Network Video Recorder which records video files directly to the internal hard drive, supporting up to 4 / 16 channels of GV-IP Cameras for network surveillance. With the feature of a Full HD HDMI video output, the GV-SNVR eliminates the need for a separate PC to view and play back video from the unit. Its four / five USB ports allow you to connect a storage device to import or export system settings, update firmware, save snapshot files and back up video in AVI format.

Optionally, you can connect a GV-Joystick V2 to control PTZ cameras. Moreover, you can remotely access the live view through mobile devices or Web browsers with advanced video features.

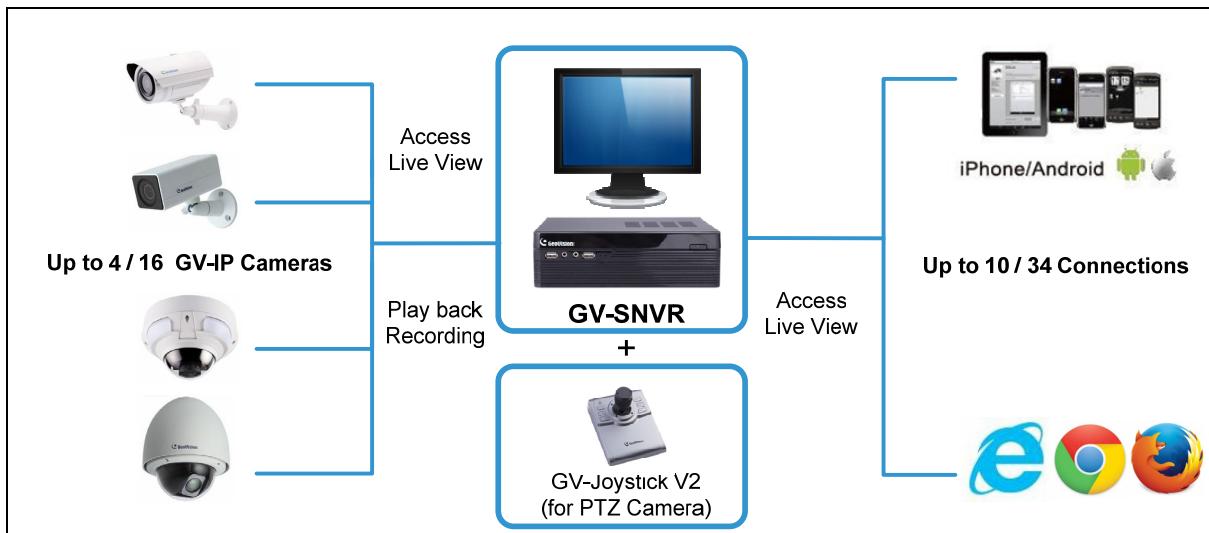


Figure 1-1

## 1.1 Features

- 4-Channel video recording (for GV-SNVR0400F)
- 16-Channel video recording (for GV-SNVR1600)
- Automatic search and set-up for IP cameras
- Dual streams support
- Continuous, motion and scheduled recordings
- Timeline playback
- Multi-channel playback
- Display of HDD status and system temperature
- DST (Daylight Saving Time) support
- NTP (Network Time Protocol) support
- GeoVision DDNS server support
- E-mail notification for recording error and password retrieval
- Recording export
- Remote live view through Web browser
- PTZ control using GV-Joystick V2 or on-screen panel
- 1080p HDMI video output
- 1 SATA HDD drawer (3.5") for up to 4 TB storage (for GV-SNVR0400F)
- 4 SATA HDD drawer (3.5") for up to 16 TB storage (for GV-SNVR1600)
- Smart device access (iOS and Android)
- Support for 9 languages

## 1.2 Models

The GV-SNVR has the following models:

<b>GV-SNVR0400F</b>	<ul style="list-style-type: none"><li>- Supports 1 SATA HDD (3.5")</li><li>- Records up to 4 IP channels</li></ul>
<b>GV-SNVR1600</b>	<ul style="list-style-type: none"><li>- Supports 4 SATA HDD (3.5")</li><li>- Records up to 16 IP channels</li></ul>

## 1.3 Packing List

You can choose to purchase a GV-SNVR package or a bundled package which includes 4 GV-Target IP Camera of your choice and a GV-PoE switch.

### 1.3.1 GV-SNVR Package

#### GV-SNVR0400F



1. GV-SNVR0400F
2. AC power cord
3. AC/DC adapter  
(DC 19V, 3.42A, 65 W)
4. Screw x 6 (for HDD)
5. SATA cable

#### GV-SNVR1600

1. GV-SNVR1600
2. AC power cord
3. SATA cable x 4
4. HDD Mounting Bracket Kit (4 pairs and 32 screws included)
5. Rack Mount Kit (2 L-shaped brackets and 6 screws included)

### 1.3.2 Bundled Package for GV-SNVR0400F



1. GV-SNVR0400F Package x 1
2. Target IP Camera x 4
3. GV-POE0400 x 1

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**Note:** For the Target IP Camera, select any 4 models from GV-EBL1100 / 2100, GV-EBX1100 / 2100, GV-EDR1100 / 2100, GV-EFD1100 / 2100. For more information, contact our sales representatives.

---

## 1.4 Compatible Devices and System Requirements

### 1.4.1 Supported GV-IP Cameras

The GV-SNVR0400F / 1600 is compatible with the following GV-IP Cameras:

- GV-Target Series IP Camera (Firmware V1.0 or later)
- GV-SD220/220-S (Firmware V1.02 or later)
- All the other GV-IP Cameras (Firmware V2.11 or later) **EXCEPT** the models below:
  - GV-BX110
  - GV-BL110
  - GV-Fisheye IP Camera
  - GV-MFD110
  - GV-PT110
  - GV-PTZ010D
  - GV-SD010/200/200-S

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**IMPORTANT:**

1. The GV-SNVR supports the recording frame rate of up to 30 fps only.
2. The GV-SNVR supports the recording bandwidth of up to 50 /100 Mbps only for GV-SNVR0400F / GV-SNVR1600 respectively.

---

## 1.4.2 System Requirements

### Recommended Hard Disks

GV-SNVR0400F supports 1 SATA HDD (3.5") with up to 4 TB capacities, and GV-SNVR1600 supports 4 SATA HDD (3.5") with total up to 16 TB capacities. For system efficiency, it is recommended to use the enterprise-level hard disk drives instead of desktop-level or green HDD. For tested hard disk drives, see *Appendix*.

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**Note:** The GV-SNVR does not support the 2.5" SATA HDD.

---

### Supported Web Browsers

- Internet Explorer 8 or later
- Google Chrome 33.0 or later
- Mozilla Firefox 28.0 or later

## 1.5 Options

Optional devices can expand your GV-SNVR's capabilities and versatility. Contact your dealer for more information.

<b>GV-Joystick V2</b>	The GV-Joystick V2 facilitates the PTZ camera control. It can be plugged into the GV-SNVR for independent use to empower the operation of PTZ cameras.
<b>GV-POE Switch</b>	The GV-POE Switch is designed to provide power along with network connection for IP devices. The GV-POE Switch is available in various models with different numbers and types of ports.
<b>Slide Rail Kit</b>	The Slide Rail Kit is used to mount a rail for the GV-SNVR1600 in a 19" cabinet.

## 1.6 Overview

### 1.6.1 Front View

#### 1.6.1.1 GV-SNVR0400F



Figure 1-2

No.	Name	Function
1	USB 2.0 Port	Connects to keyboard, mouse, storage device or GV-Joystick V2.
2	Audio In	Not functional.
3	Audio Out	Not functional.
4	Power LED	Shows constant blue when the power is supplied for the device.
5	HDD Error LED	Shows constant red when the following situations occur: <ul style="list-style-type: none"><li>• No hard drive is installed.</li><li>• The hard drive is not formatted.</li><li>• The hard drive fails.</li></ul>
6	Power Button	Turns on/off the power.

### 1.6.1.2 GV-SNVR1600



Figure 1-3

No.	Name	Function
1	Power Button	Turns on/off the power.
2	Power LED	Shows constant blue when the power is supplied for the device.
3	HDD Status LED	Glows blue when the hard drive is writing or reading data.
4	HDD Error LED	Shows constant red when the following situations occur: <ul style="list-style-type: none"> <li>• No hard drive is installed.</li> <li>• The hard drive is not formatted.</li> <li>• The hard drive fails.</li> </ul>
5	WAN LED	Shows constant blue when the WAN port is receiving activity.
6	LAN LED	Shows constant blue when the LAN port is receiving activity.
7	USB 2.0 Port	Connects to keyboard, mouse, storage device or GV-Joystick V2.

## 1.6.2 Rear View

### 1.6.2.1 GV-SNVR0400F



Figure 1-4

No.	Name	Function
1	Gigabit Ethernet Port	Connects to the network.
2	HDMI Output	Connects to the HD TV.
3	USB 2.0 Port	Connects to keyboard, mouse, storage device or GV-Joystick V2.
4	Default Button	Restores the device to default settings. Press the button for 15 seconds to load default.
5	Power Input	Connects to power supply.

### 1.6.2.2 GV-SNVR1600



Figure 1-5

No.	Name	Function
1	Audio Microphone In Port	Not functional.
2	VGA Monitor Output	Connects to the VGA monitor.
3	HDMI Port	Connects to the HD TV.
4	USB 2.0 Port x 4	Connects to keyboard, mouse, storage device or GV-Joystick V2.
5	Power Input	Connects to power supply.
6	Gigabit Ethernet Port (LAN)	Connects to the network.
7	Gigabit Ethernet Port (WAN)	Connects to the network.
8	Audio Line Out Port	Connects to the speaker.
9	Audio Line Out Port	Connects to the headphone.

**Note:** When the two Ethernet ports (No. 6 and No. 7) are used together, one is LAN port and the other is WAN port.

## Chapter 2 Getting Started

### 2.1 Installing the Hard Drive

The GV-SNVR uses SATA hard drive for video data storage. Before recording, be sure to install the hard drive.

#### 2.1.1 GV-SNVR0400F

Follow the steps below to install the hard drive to the GV-SNVR0400F.

1. Unscrew the two screws on the rear panel and remove the cover.



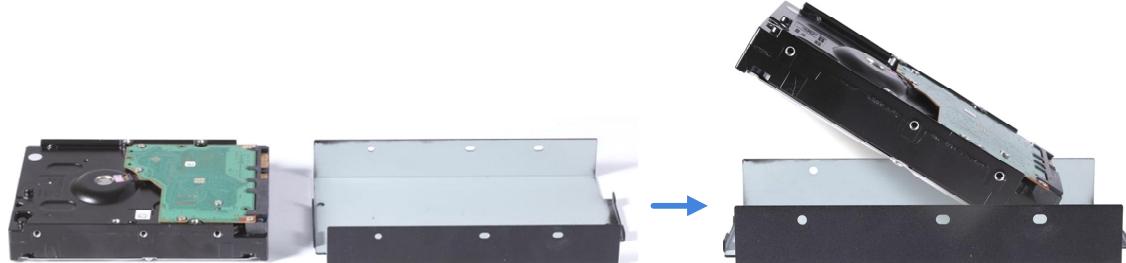
Figure 2-1

2. Unscrew the drive drawer and take it out from the device.



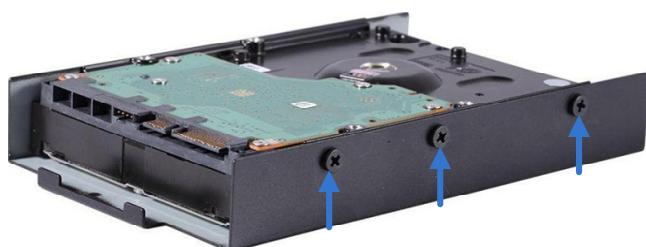
Figure 2-2

3. Place the hard drive in the drive drawer as below by aligning the three holes.



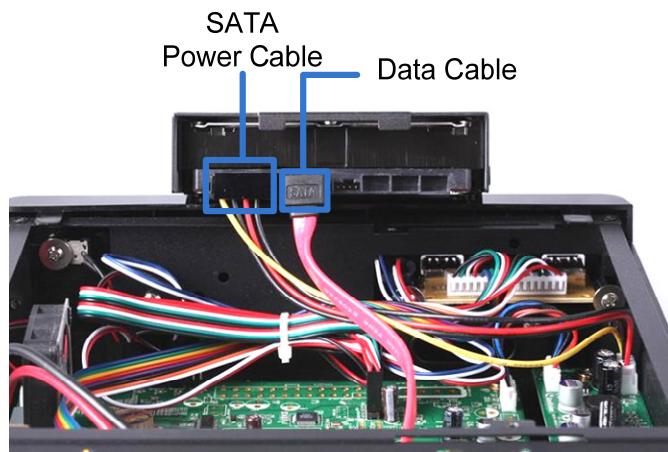
*Figure 2-3*

4. Secure the hard drive with the drive drawer using the supplied 6 screws (3 screws on each side).



*Figure 2-4*

5. Connect the SATA Power Cable and Data Cable to the hard drive.



*Figure 2-5*

6. Put the drive drawer back in the device and secure the two screws on the drive drawer (Figure 2-2).
7. Assemble the cover with the device by tightening the screws on rear panel (Figure 2-2).

The hard drive is now ready to use.

## 2.1.2 GV-SNVR1600

Follow the steps below to install the hard drive to the GV-SNVR1600.

1. Loosen the 6 screws and remove the cover.



Figure 2-6

2. Assemble the mounting brackets with the hard drive and tighten the screws on both sides.

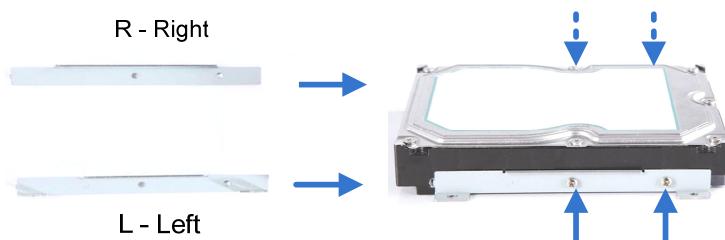


Figure 2-7

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**Note:** Each mounting bracket is labeled **L** or **R** for recognition. Align the mounting bracket with the holes on the hard drive and make sure it is secured to the correct side.

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3. Align the mounting bracket with the holes inside the unit.

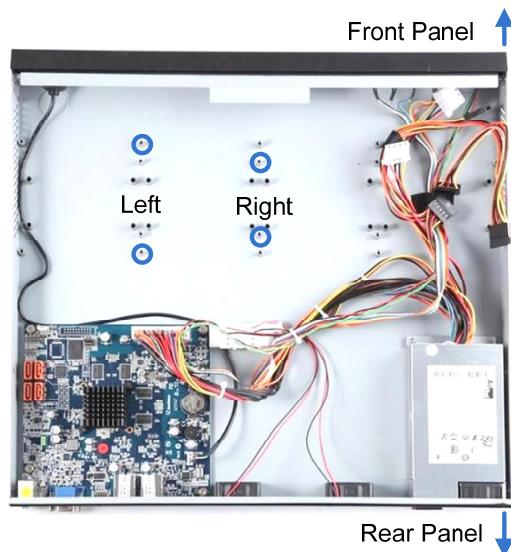
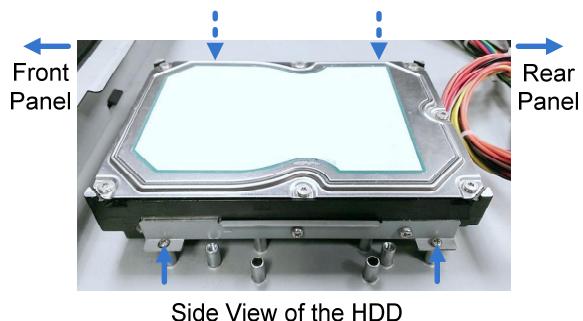


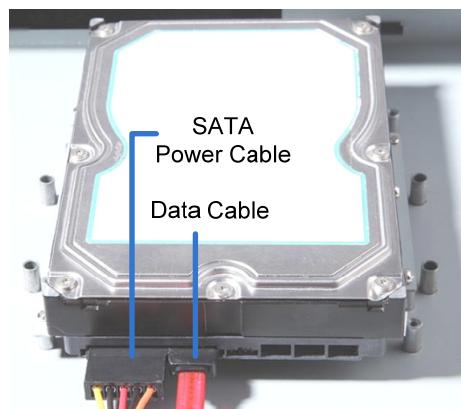
Figure 2-8

4. Tighten the 4 screws on the side of the hard drive.



*Figure 2-9*

5. Connect the SATA Power Cable and Data Cable to the hard drive.



*Figure 2-10*

6. To install more HDDs, repeat the steps above.

7. Place the cover back and tighten the screws.

The hard drive is now ready for use.

## 2.2 Interface Connections

Follow the steps below to connect the GV-SNVR.

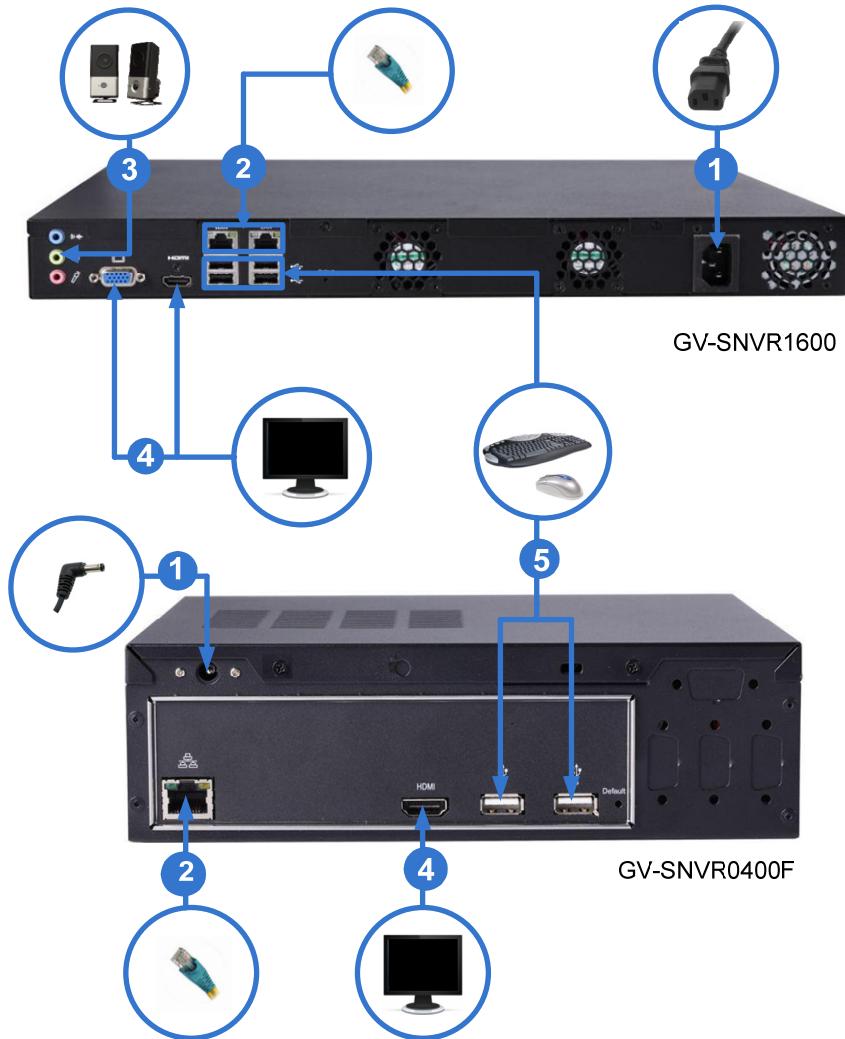


Figure 2-11

1. Connect the GV-SNVR to power.
2. Connect the GV-SNVR to the LAN port using the RJ-45 cable.
3. For GV-SNVR1600, connect speakers to the Audio Line Out port.
4. Connect the HDTV to HDMI connector for video output. For GV-SNVR1600, optionally connect the VGA monitor to the D-Sub connector for dual-monitor display.
5. Connect the mouse and the keyboard to the USB ports.

Press the power button to turn on the GV-SNVR.

**Note:**

1. The GV-SNVR is DHCP enabled. When it is connected to the network, it will be automatically assigned an IP address.
2. For GV-SNVR1600, the monitor used for VGA output must be capable of having a screen resolution of 1080p.

### 2.2.1 Network Connection for GV-SNVR1600

There are two network ports, LAN and WAN, for the GV-SNVR1600. If both network ports are used simultaneously, only the WAN port can be connected to the Internet. Therefore, it is recommended to connect the devices as below.

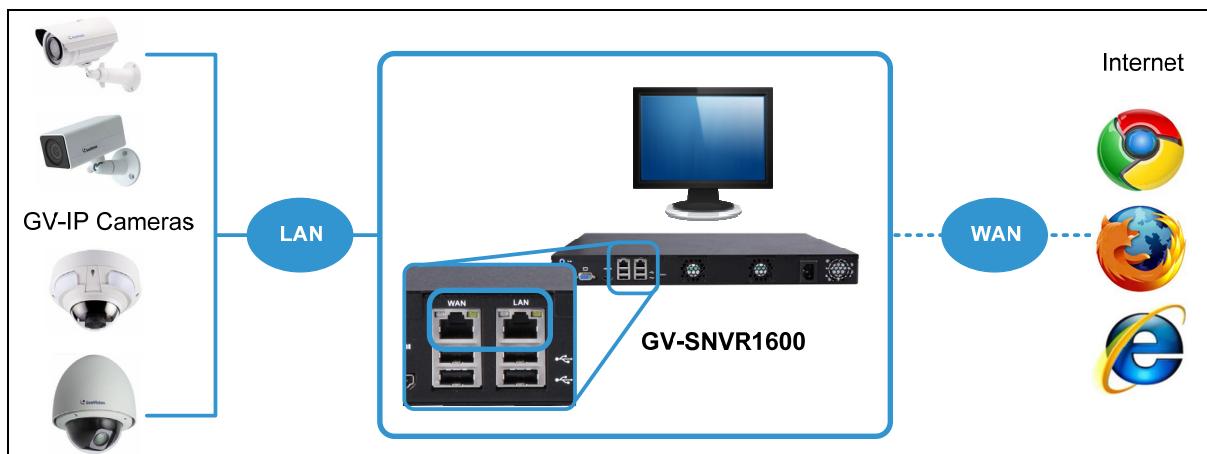


Figure 2-12

1. Connect GV-IP Cameras to the GV-SNVR1600 through the LAN port.
2. Connect GV-SNVR1600 to the Internet through the WAN port.

**Note:** When the LAN and WAN ports are used together, the Auto Search function is only supported by the LAN port. To connect to GV-IP Cameras under the WAN, you can add the cameras manually.

**IMPORTANT:** It is required to divide LAN and WAN networks into different subnets or segments; otherwise, your network will fail. For details, see *3.3 Network*.

## 2.3 Initial Configuration

After you have installed the IP cameras under the same LAN with the GV-SNVR, you are ready to display the channels on GV-SNVR.

### 2.3.1 Automatically setting up GV-IP Camera

To automatically set up the IP cameras, follow the steps below.

1. Power on the GV-SNVR. It automatically searches and lists the IP cameras under the same LAN.
2. You are prompted with a dialog box asking if you want to automatically assign IP address. The automatic assignment will only apply on the cameras with IP address **192.168.0.10**.

No.	CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand	Actions
1	<input type="checkbox"/>	GV-PT320D	192.168.0.10	10000	0013E20550D4				Geovision	 
2	<input type="checkbox"/>	GV-MFD520	192.168.0.10	10000	0013E2054F23				Geovision	 
3	<input type="checkbox"/>	GV-MFD1501	192.168.0.10	10000	0013E2FF0A44				Geovision	 
4	<input type="checkbox"/>	GV-MFD2400	192.168.0.10	10000	0013E20551CC				Geovision	 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 
	<input type="checkbox"/>									 

Figure 2-13

3. Click **Apply**. The GV-SNVR assigns unused IP addresses to the cameras in an ascending numerical order and enables the connection.

No.	CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand	Actions
1	<input checked="" type="checkbox"/>	1	GV-PT320D	192.168.0.3	10000	0013E203465D	H264:1920x1080 H264:448x252	5.7Mbps	Connected	Geovision  
2	<input checked="" type="checkbox"/>	2	GV-MFD520	192.168.0.11	10000	0013E204FFFA	H264:1920x1080 H264:448x252	2.1Mbps	Connected	Geovision  
3	<input checked="" type="checkbox"/>	3	GV-MFD1501	192.168.0.17	10000	0013E2025584	H264:1280x1024 H264:320x256	4.0Mbps	Connected	Geovision  
4	<input checked="" type="checkbox"/>	4	GV-MFD2400	192.168.0.79	10000	0013E20550EE	H264:1280x1024 H264:320x256	1.8Mbps	Connected	Geovision  

Figure 2-14

Upon successful connection, the status displays “Connected”, with the resolution and bandwidth being displayed in the correspondent columns. When you close the Camera page, you can access the live view.

---

**IMPORTANT:**

1. By default, GV-IP Cameras have the IP address **192.168.0.10**. The GV-SNVR will automatically assign unused IP addresses to these cameras to avoid IP address conflict with others under the same LAN.
2. The GV-SNVR connects with IP cameras with the default ID and password **admin**. If you fail to log in the IP camera, click the **Edit** icon  and type the correct ID and password for connection.



### 2.3.2 Manually Connecting GV-IP Camera

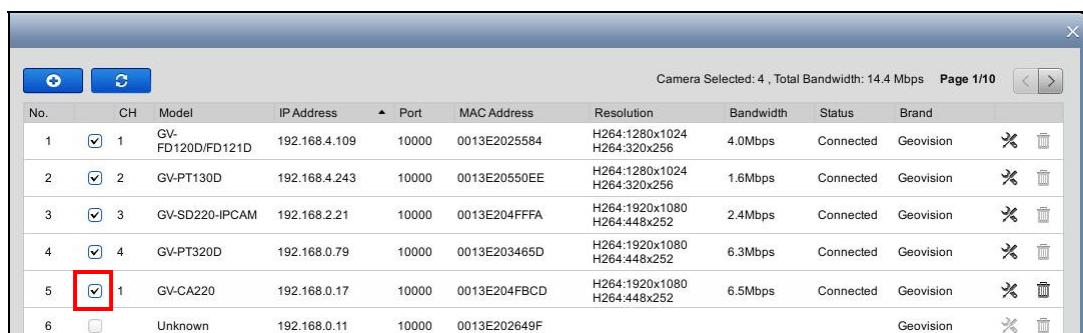
To manually add the GV-IP Camera to the camera list, follow the steps below.

1. On the Camera page, click the **Add Cameras**  button.
2. Type the IP Address, Username and Password of the desired IP camera. Keep the default Port **10000** or modify if necessary.

Add Camera	1	( 1 /256 max)	Duplicate
Protocol	Geovision		
Username			
Password			
IP Address	<input type="checkbox"/>		
Port	10000	<input type="checkbox"/>	
<input type="button" value="Cancel"/> <input type="button" value="Apply"/>			

Figure 2-15

3. Click **Apply** to add the IP camera.
4. To add multiple cameras, repeat step 2, type the number of cameras you want to create in the **Add Camera** column.
  - To duplicate camera with same IP address but different ports, type the IP address and click the **Duplicate** column of Port.
  - To duplicate camera with same port number but different IP addresses, type the port number and click the **Duplicate** column of IP Address.
5. To connect the GV-SNVR with the added cameras, click the box next to the **CH** column on the Camera page.



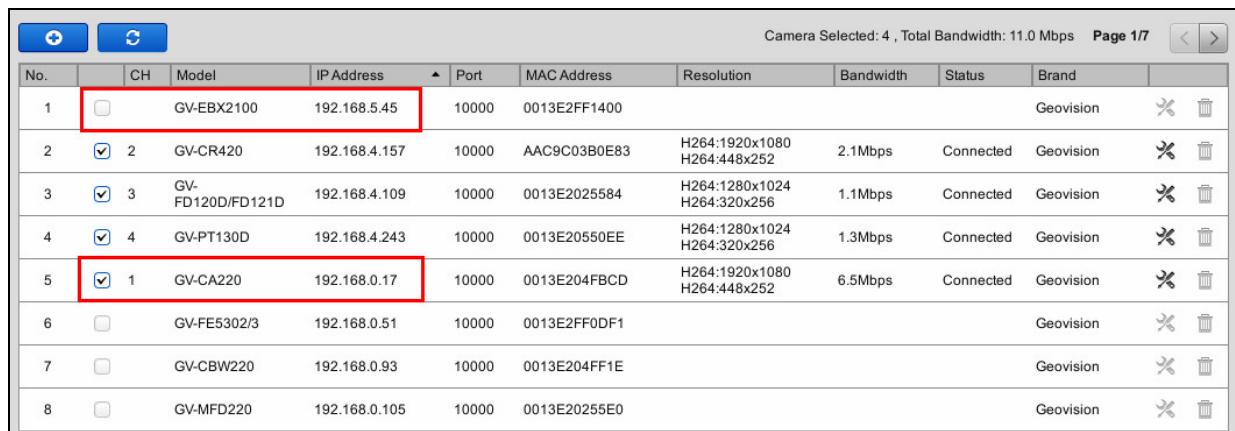
No.	CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand	Actions
1	<input checked="" type="checkbox"/>	1 GV-FD120D/FD121D	192.168.4.109	10000	0013E2025584	H264:1280x1024 H264:320x256	4.0Mbps	Connected	Geovision	 
2	<input checked="" type="checkbox"/>	2 GV-PT130D	192.168.4.243	10000	0013E20550EE	H264:1280x1024 H264:320x256	1.6Mbps	Connected	Geovision	 
3	<input checked="" type="checkbox"/>	3 GV-SD220-IPCAM	192.168.2.21	10000	0013E204FFFA	H264:1920x1080 H264:448x252	2.4Mbps	Connected	Geovision	 
4	<input checked="" type="checkbox"/>	4 GV-PT320D	192.168.0.79	10000	0013E203465D	H264:1920x1080 H264:448x252	6.3Mbps	Connected	Geovision	 
5	<input checked="" type="checkbox"/>	1 GV-CA220	192.168.0.17	10000	0013E204FBBCD	H264:1920x1080 H264:448x252	6.5Mbps	Connected	Geovision	 
6	<input type="checkbox"/>	Unknown	192.168.0.11	10000	0013E202649F				Geovision	 

Figure 2-16

6. To delete the added IP camera, click the **Delete** button  of the camera on the Camera page.

### 2.3.3 Changing Cameras and Assigning Channels

On the Camera page, you can change the connected IP cameras and re-assign the channels for display. For example, to change the camera on Channel 1, deselect the connected camera on Channel 1 and select another camera for connection. The selected camera is now assigned to Channel 1.



No.	CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand
1	<input type="checkbox"/>	GV-EBX2100	192.168.5.45	10000	0013E2FF1400	H264:1920x1080 H264:448x252	2.1Mbps	Connected	Geovision
2	<input checked="" type="checkbox"/>	2	GV-CR420	192.168.4.157	10000	AAC9C03B0E83	H264:1280x1024 H264:320x256	1.1Mbps	Connected
3	<input checked="" type="checkbox"/>	3	GV-FD120D/FD121D	192.168.4.109	10000	0013E2025584	H264:1280x1024 H264:320x256	1.3Mbps	Connected
4	<input checked="" type="checkbox"/>	4	GV-PT130D	192.168.4.243	10000	0013E20550EE	H264:1280x1024 H264:320x256	6.5Mbps	Connected
5	<input checked="" type="checkbox"/>	1	GV-CA220	192.168.0.17	10000	0013E204FBCD	H264:1920x1080 H264:448x252	Geovision	
6	<input type="checkbox"/>		GV-FE5302/3	192.168.0.51	10000	0013E2FF0DF1		Geovision	
7	<input type="checkbox"/>		GV-CBW220	192.168.0.93	10000	0013E204FF1E		Geovision	
8	<input type="checkbox"/>		GV-MFD220	192.168.0.105	10000	0013E20255E0		Geovision	

Figure 2-17

## 2.4 Formatting the Hard Drive

After installing the hard drive to GV-SNVR, you need to format the hard drive before enabling the monitoring.

1. On the main screen, click the **Setting** button.



Figure 2-18

2. Select **Storage**.

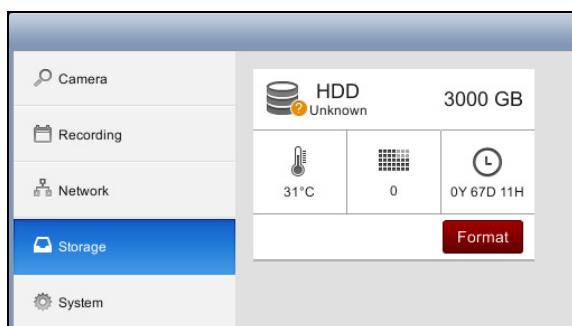


Figure 2-19

3. Click **Format**. This dialog box appears.

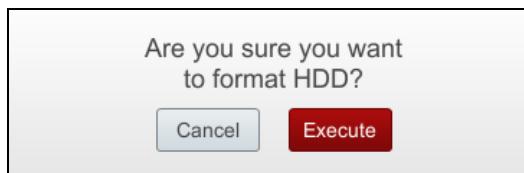


Figure 2-20

4. Click **Execute** to format the hard drive.

When the hard drive is successfully formatted, its icon should be marked with a green tick, and the “Normal” message appears. The information of operating temperature, hard drive status and total time in use is also displayed.

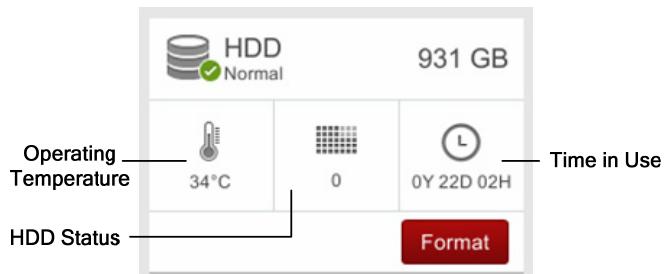


Figure 2-21

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**Note:** When the hard drive status displays other value instead of **0**, replace the hard drive with a new one to ensure proper video recording.

---

## 2.5 Main Screen

Close the Camera page to display connected channels on the main screen. Here we use GV-SNVR0400F for illustration.

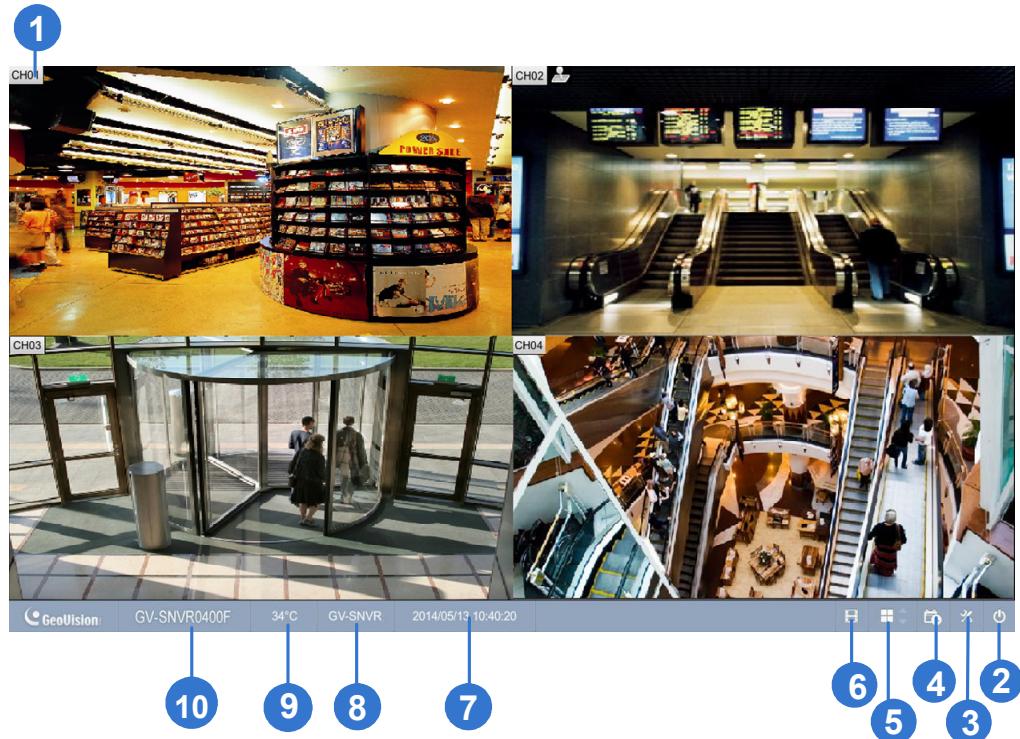


Figure 2-22

No.	Name	Description
1	Camera Name	Indicates the camera name. The column changes from gray to red when the recording is enabled. See <i>Camera Name</i> in <a href="#">3.1 Camera</a> .
2	System	Brings up the options: Log Out and Shutdown.
3	Setting	Accesses the settings of Camera, Recording, Network, Storage and System.
4	Record	Starts/Stops monitoring.
5	Up / Down	Selects screen divisions and switch between cameras in single division.
6	Playback	Displays the playback panel.
7	Date / Time	Displays the current date and time.
8	Device Name	Displays the device name of GV-SNVR. See <i>Device Name</i> in <a href="#">3.5 System</a> .
9	Temperature	Displays the current temperature.
10	Model Name	Displays the model name of GV-SNVR.

## 2.6 Enabling the Recording

To start recording, click the **Record** button (No. 4, Figure 2-22) and select a camera. To enable recording for all the connected cameras, select **Start All Monitoring**.

By default, the GV-SNVR records with the **Round-the-clock** mode and **H.264** codec. The default recording resolution depends on the settings of each camera.

- To change recording mode, see [3.2 Recording](#).
- To change video resolution, see [3.1 Camera](#).

## 2.7 Playing Back Video

You can instantly play back the recorded video without interrupting the monitoring and recording.

- To instantly play back the recording of one single channel, click the **Camera Name** (No. 1, Figure 2-22), select **Instant Playback**.
- To instantly play back the recording of all channels, click the **Playback** button (No. 6, Figure 2-22).

---

**Note:** For details on playing back the recording, see [Chapter 4 Video Playback](#).

---

## 2.8 Live Monitoring

### GV-SNVR0400F

On the main screen, the live view of connected cameras is displayed in 4 divisions by default.

You can click the **Division** button  (No. 5, Figure 2-22) and select **1 or 4 Division**.

Optionally, click on the live view of desired camera to switch to full screen.

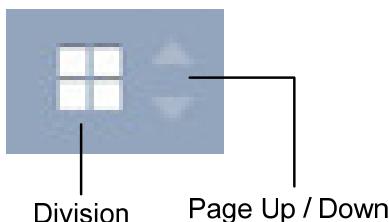


Figure 2-23

### GV-SNVR1600

On the main screen, the live view of connected cameras is displayed in 16 divisions by default. You can click the **Division** button  and select **1, 4 or 9 Division**. Optionally, click on the live view of desired camera to switch to full screen.

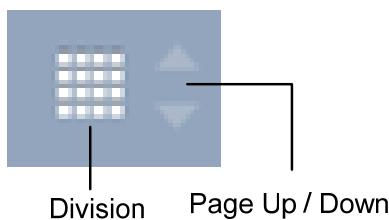


Figure 2-24

### 2.8.1 Snapshot

To take a snapshot of live or playback video, follow the steps below.

1. Connect an USB storage device of FAT32 format to the GV-SNVR.
2. Click the camera name of desired camera and select **Snapshot**. The message “Snapshot Success” pops up when the captured image is successfully saved to the USB storage device.

Each image is automatically saved in JPEG format with a file name indicating the date and time of snapshot.

## 2.8.2 Audio

To enable the audio function on live video, follow the steps below.

---

**Note:**

1. The audio function is only available for GV-SNVR1600.
2. To listen to the audio, make sure the Enable Audio function is applied for the camera. For details, see [3.1 Camera](#).

---

1. Click the live view of the desired camera to switch to full screen.
2. Click the camera name and select **Speaker**. The audio icon  appears beside the camera name, and the audio is now accessible.

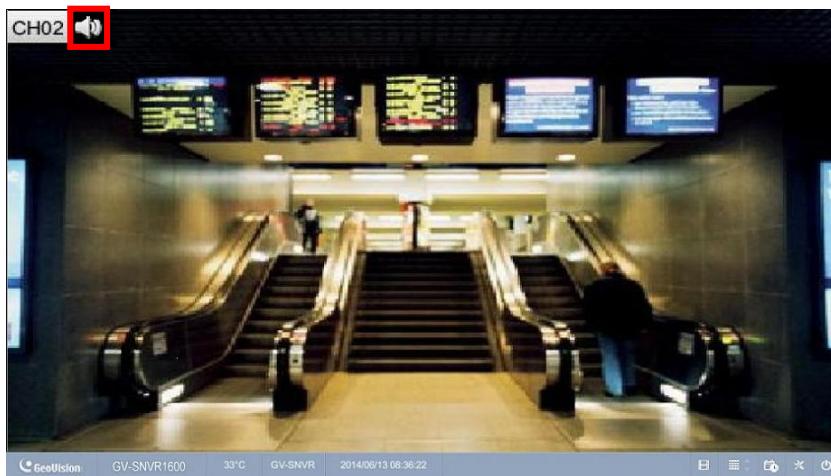


Figure 2-25

### 2.8.3 PTZ Control

To enable the PTZ function on live video, click the camera name of desired camera and select **Enable PTZ**. The PTZ control panel appears at the lower-right corner of the live view.

**Note:** The option is only available for the cameras supporting PTZ functions.



Figure 2-26

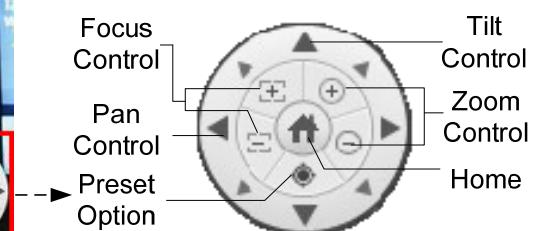


Figure 2-27

- **Home:** Brings the PTZ live view back to the Home position.
- **Pan/Tilt Control:** Allows the camera to pan and tilt to any angle.
- **Zoom Control:** Allows the camera to zoom in or out.
- **Focus Control:** Adjusts the camera to focus in or out.
- **Preset Option:** Moves the camera to a preset point by entering a preset number using the onscreen keypad.

To enable PTZ control, you can also use the GV-Joystick V2, a plug-and-play device used to pan, tilt, zoom and focus a PTZ camera. When the GV-Joystick V2 is connected to the USB port on the GV-SNVR, the Joystick icon  will appear beside the camera name.

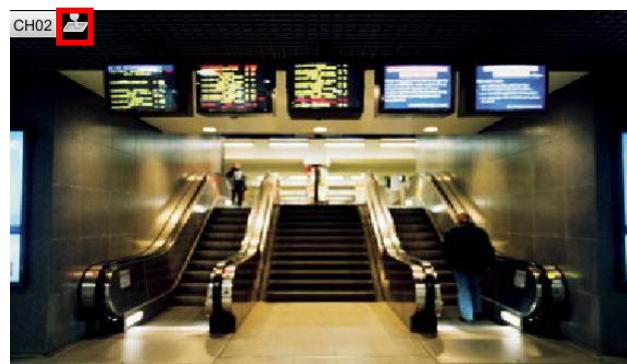


Figure 2-28

For details on the GV-Joystick V2, see *GV-Joystick V2 User's Manual*.

---

**Note:** The GV-SNVR does not support GV-Keyboard.

---

## Digital PTZ Function

For non-PTZ cameras, the Digital PTZ (DPTZ) function allows you to simulate the PTZ movement on the screen.

---

**Note:** The DPTZ function is only available for GV-SNVR1600.

---

To enable the DPTZ function on live video, click the camera name of desired camera and select **Enable Digital PTZ**. The PTZ control panel appears at the lower-right corner of the live view.

Click the **Zoom In** button first and then click **Tilt** and **Pan** buttons to move the camera view.



Figure 2-29

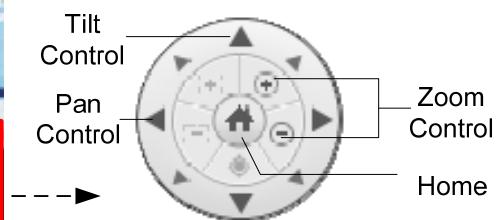


Figure 2-30

- **Home:** Brings the DPTZ live view back to the Home position.
- **Pan/Tilt Control:** Allows you to pan and tilt on the live view.
- **Zoom Control:** Allows you to zoom in or out on the live view.

---

**Note:**

1. The Focus Control and Preset functions are not supported.
2. The DPTZ function is only available for non-PTZ cameras.

---

## Chapter 3 System Configuration

This section introduces the settings of camera, video recording, network, storage and system.

### 3.1 Camera

To access the camera settings, click the **Edit** button  of desired camera on the Camera page.

No.	CH	Model	IP Address	Port	MAC Address	Resolution	Bandwidth	Status	Brand	Edit	Delete
1	<input checked="" type="checkbox"/>	1 GV-PT320D	192.168.0.79	10000	0013E203465D	H264:1920x1080 H264:448x252	5.7Mbps	Connected	Geovision		
2	<input checked="" type="checkbox"/>	2 GV-SD220-IPCAM	192.168.2.21	10000	0013E204FFFA	H264:1920x1080 H264:448x252	2.1Mbps	Connected	Geovision		
3	<input checked="" type="checkbox"/>	3 GV-FD120D/FD121D	192.168.4.109	10000	0013E2025584	H264:1280x1024 H264:320x256	4.0Mbps	Connected	Geovision		
4	<input checked="" type="checkbox"/>	4 GV-PT130D	192.168.4.243	10000	0013E20550EE	H264:1280x1024 H264:320x256	1.8Mbps	Connected	Geovision		
5	<input type="checkbox"/>	Unknown	192.168.0.3	10000	0013E202331A				Geovision		
6	<input type="checkbox"/>	Unknown	192.168.0.11	10000	0013E202649F				Geovision		

Figure 3-1

The Camera Settings page appears.

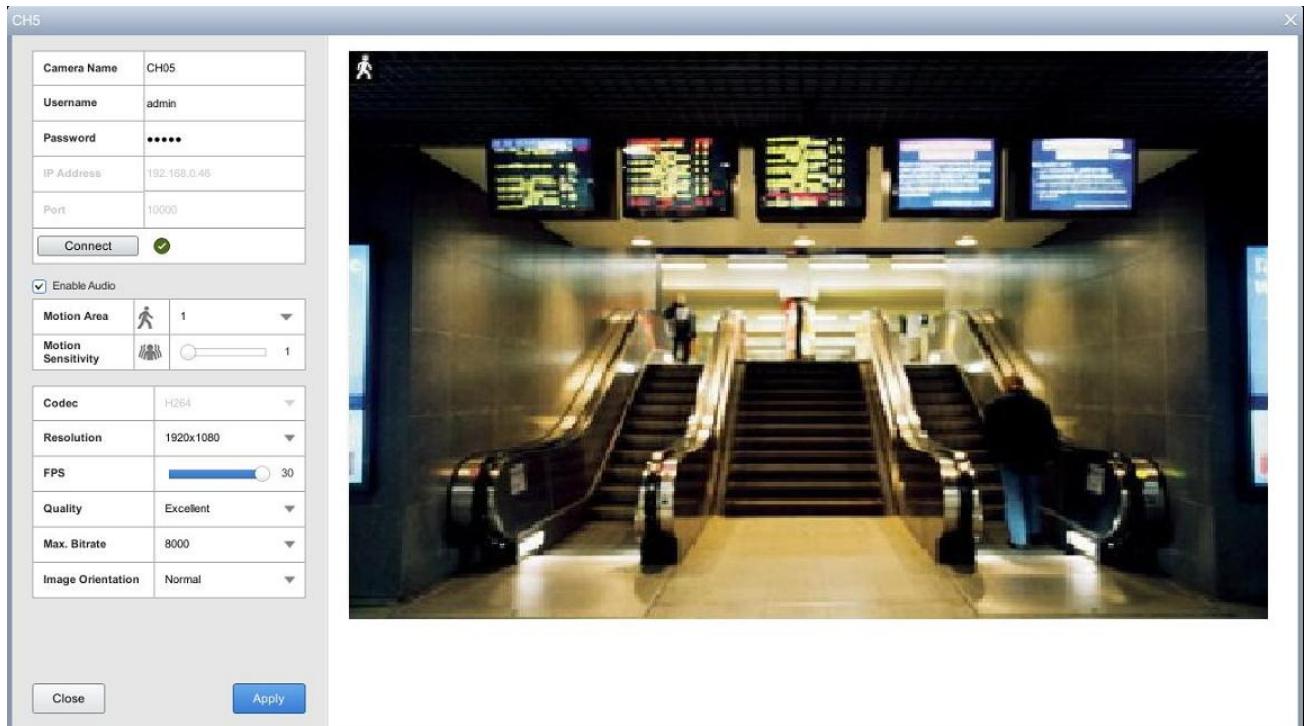


Figure 3-2

- **Camera Name:** Type a desired name for the camera.
- **Username:** Type the username of the camera. The default is **admin**.
- **Password:** Type the password of the camera. The default is **admin**.
- **Enable Audio:** Click to enable audio streaming. Note this function is only available for GV-SNVR1600.
- **Motion Area:** Draw up to 8 areas with different sensitivity values on the image for motion detection.
- **Motion Sensitivity:** Configure the sensitivity value from 1 to 10 for the motion detection. The higher the value, the more sensitive the camera is to the motion.
- **Codec:** The video codec is H.264.
- **Resolution:** Select the video resolution for the camera.
- **FPS:** Set up recording frame rate for the camera. Note the GV-SNVR0400F / 1600 supports up to 30 fps.
- **Quality:** Select the level of video quality.
- **Max. Bit Rate:** Set up the maximum bit rate of video stream.
- **Image Orientation:** Adjust the image orientation by selecting **Normal, Horizontal Mirror, Vertical Flip or Rotate 180**.

To enable the settings, click **Apply**.

## 3.2 Recording

You can set up desired recording mode for specific period on specific days for each connected camera. The default recording mode is round-the-clock.



Figure 3-3

1. Select a camera from the drop-down list at the upper-right corner.
2. To set up the recording mode, click the **Motion Recording** icon  or **Round-the-clock** icon  and drag the cursor on the desired period.
3. To clear the settings, click the **Clear** icon and drag the cursor on the desired period.
4. Click **Apply** or **Apply to all cameras** as desired to enable the settings.

### 3.3 Network

The Network section includes basic network configurations that enable the GV-SNVR to be connected to the network. By default, the GV-SNVR is assigned with a dynamic IP address when connecting to the network.

#### [LAN]

LAN	WAN	DDNS	E-Mail
IP Configuration	Static IP	▼	
MAC Address	00:13:E2:FF:10:C7		
IP Address	192.168.0.100		
Subnet Mask	255.255.255.0		
Gateway	192.168.0.1		
Primary DNS	192.168.0.1		
Second DNS	192.168.0.2		
<input type="button" value="Apply"/>			

Figure 3-4

- **IP Configuration:** Select **DHCP** or **Static** according to your network environment.
- **MAC Address:** Displays the MAC Address of the GV-SNVR.

To assign a static IP address, select **Static** and fill out the required settings below.

- **IP Address:** Type a static IP address for the GV-SNVR. The default is **192.168.0.100**.
- **Subnet Mask:** Type a subnet mask. The default is **255.255.255.0**.
- **Gateway:** Type a gateway. The default is **192.168.0.1**.
- **Primary DNS:** Type a primary DNS. The default is **192.168.0.1**.
- **Second DNS:** Type a second DNS. The default is **192.168.0.2**.

Click **Apply**. The GV-SNVR is now accessible by entering the assigned IP address on Web browser.

**[WAN]**

LAN	WAN	DDNS	E-Mail
IP Configuration	PPPoE	▼	
MAC Address	00:13:E2:FF:10:C6		
IP Address	192.168.4.56		
Subnet Mask	255.255.248.0		
Gateway	192.168.0.1		
Primary DNS	192.168.100.1		
Second DNS	192.168.100.2		
PPPoE Username			
PPPoE Password			
<b>Apply</b>			

*Figure 3-5*

- **IP Configuration:** Select **DHCP** or **Static** according to your network environment.
- **MAC Address:** Displays the MAC Address of the GV-SNVR.

To enable the PPPoE connection, select **PPPoE** and fill out the required settings below.

- **Primary DNS:** Type a primary DNS. The default is **192.168.100.1**.
- **Second DNS:** Type a second DNS. The default is **192.168.100.2**.
- **PPPoE Username:** Type the username you have registered for PPPoE.
- **PPPoE Password:** Type the password you have registered for PPPoE.

---

**Note:** The WAN configuration is only available for GV-SNVR1600.

---

**IMPORTANT:** When the LAN and WAN are applied simultaneously, note the following:

- Only the WAN can be connected to the Internet.
- Only the IP Cameras under the same LAN can be searched by the GV-SNVR1600. To connect with the IP cameras under the WAN, you must add the cameras manually. For details, see *2.3.2 Manually Connecting GV-IP Camera*.

---

## [DDNS]

DDNS (Dynamic Domain Name System) provides a convenient way of accessing the GV-SNVR when using a dynamic IP address. DDNS assigns a domain name to the GV-SNVR, so you do not need to go through the trouble of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed. Before enabling the following DDNS function, you should have applied for a Host Name from the DDNS service provider's website. The provider is GeoVision DDNS Server, <http://ns.gvdip.com/register.aspx>.

LAN	WAN	DDNS	E-Mail
DDNS Server	GeoVision DDNS Server		
DDNS Host name	julia@gvdip.com		
DDNS Password	*****		
Last Update Time			
<input checked="" type="checkbox"/> Enable		<b>Apply</b>	

Figure 3-5

To enable the DDNS function, click the **Enable** box, type the hostname and password you have registered with GeoVision DDNS Server and click **Apply**.

**[E-mail]**

Configure your mail server to allow e-mail notification on:

- Recording error of writing recording data to the hard disk drive
- Request for retrieving the username and password for system login

LAN	WAN	DDNS	E-Mail
Sender			
Receiver			
SMTP Server			
SMTP Port			
Authentication	Enable	▼	
SMTP Username			
SMTP Password			
<b>Apply</b>			

Figure 3-6

- **Sender:** Type the sender's e-mail address.
- **Receiver:** Type the recipients' e-mail address.
- **SMTP Server:** Type your mail server's URL address or IP address.
- **SMTP Port:** Type your mail server's port value.
- **Authentication:** Select **Enable** if the SMTP Server needs authentication and type a valid username and password to log in the SMTP server in the next two columns. Select **Enable SSL** if your e-mail server requires the SSL authentication for connection.

## 3.4 Storage

You must format the hard drive before enabling the video recording. For details, see *Formatting the Hard Drive in Chapter 2*.

## 3.5 System

On the System page, you can access the configuration of login information of Administrator and Guest, video resolution and time settings. You can also access the system log with filter as desired.

System	Time	System Log	v1.00r26 2014-04-17
Device Name	GV-SNVR		
Language	English ▾		
Administrator Account	admin		
Administrator Password	*****		
Guest Account	guest		
Guest Password	*****		
Auto Login	Enable ▾		
Default Camera Account	admin		
Default Camera Password	*****		
Temperature	°C ▾		
Resolution	1080P ▾		
<input type="button" value="Load Default"/> <input type="button" value="Advanced Options ▾"/>		<input type="button" value="Apply"/>	

Figure 3-7

### [System]

- **Device Name:** Type a desired name for the GV-SNVR.
- **Language:** Select **English, Traditional Chinese, Spanish, Russian, Portuguese, French, German, Italian or Japanese** as the language of the OSD interface.
- **Administrator Account:** Type the username of the Administrator. The default is **admin**.
- **Administrator Password:** Type the password of the Administrator. The default is **admin**.
- **Guest Account:** Type the username of the Guest. The default is **guest**.
- **Guest Password:** Type the password of the Guest. The default is **guest**.
- **Auto Login:** Select **Enable** to automatically log in the GV-SNVR at startup.
- **Default Camera Account:** Set up the default username of camera for connection. The default is **admin**.

- **Default Camera Password:** Set up the default password of camera for connection. The default is **admin**.
- **Temperature:** Select a temperature scale for the display of operating temperature.
- **Resolution:** Select the video output resolution from **720p**, **1080p** and **1080i**.

---

**Note:** The Resolution options are not available for GV-SNVR1600, which only supports the resolution of **1080p**.

---

To restore the GV-SNVR to default settings, click **Load Default** and follow the on-screen instructions. Optionally, press the **Load Default** button on the rear panel of the device for 15 seconds.

To import or export the system settings and update firmware, click **Advanced Options** for configuration. Optionally, you can configure through the GV-IP Device Utility. For details, see [6.2 Using the GV-IP Device Utility](#).

### [Time]

System		Time	System Log
Time Zone	(UTC+08:00) Taipei		
Daylight Saving Time	<input type="checkbox"/> Enable		
Time Sync	<input checked="" type="checkbox"/> Enable NTP	time.stdtime.gov.tw	
	Date Setup	2014/08/14	
	Time Setup	8 : 12 : 28	
Date Format Setup	YYYY/MM/DD		
<b>Apply</b>			

Figure 3-8

- **Time Zone:** Select a time zone of your location.
- **Daylight Saving Time:** Click **Enable** and type the start time and end time for the system to automatically adjust to Daylight Saving Time.
- **Time Sync:** Click **Enable NTP** and type the URL of a network time server to synchronize the clock of GV-SNVR over network. Otherwise, manually set up the date and time by filling out the correspondent fields.

- **Date Format Setup:** Select a desired format for date display.

To enable the settings, click **Apply**.

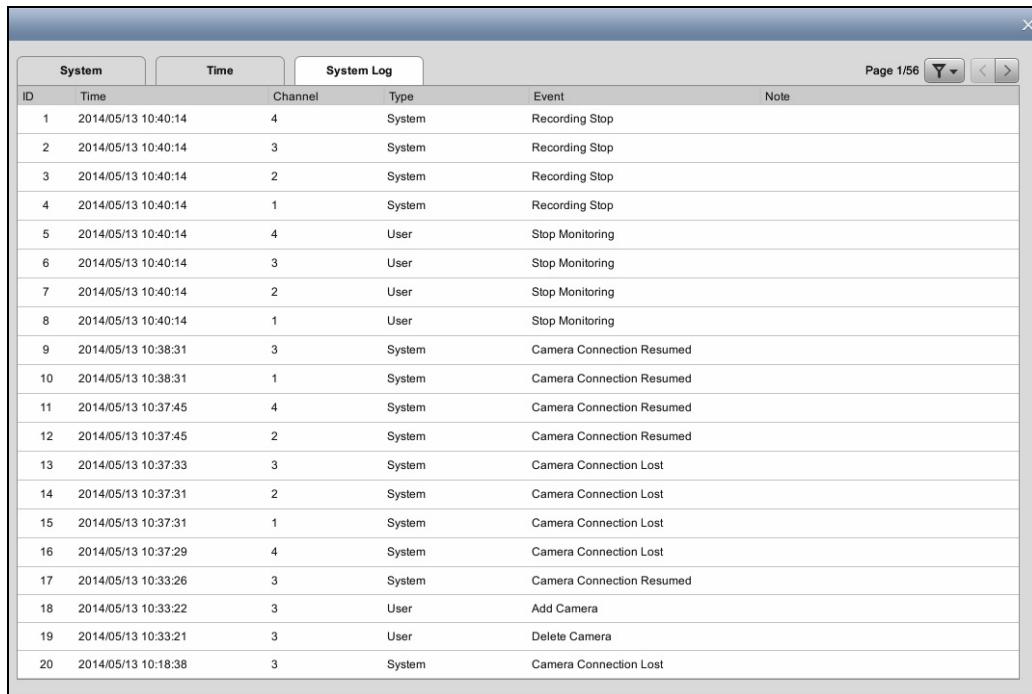
---

**Note:** You can also use the GV-IP Device Utility to synchronize the date and time of GV-SNVR with a computer. For details, see *GV-IP Device Utility Installation Guide* on the Software CD.

---

## [System Log]

This page lists all the changes made to the system.



System		Time	System Log			Page 1/56	Filter	< >
ID	Time	Channel	Type	Event	Note			
1	2014/05/13 10:40:14	4	System	Recording Stop				
2	2014/05/13 10:40:14	3	System	Recording Stop				
3	2014/05/13 10:40:14	2	System	Recording Stop				
4	2014/05/13 10:40:14	1	System	Recording Stop				
5	2014/05/13 10:40:14	4	User	Stop Monitoring				
6	2014/05/13 10:40:14	3	User	Stop Monitoring				
7	2014/05/13 10:40:14	2	User	Stop Monitoring				
8	2014/05/13 10:40:14	1	User	Stop Monitoring				
9	2014/05/13 10:38:31	3	System	Camera Connection Resumed				
10	2014/05/13 10:38:31	1	System	Camera Connection Resumed				
11	2014/05/13 10:37:45	4	System	Camera Connection Resumed				
12	2014/05/13 10:37:45	2	System	Camera Connection Resumed				
13	2014/05/13 10:37:33	3	System	Camera Connection Lost				
14	2014/05/13 10:37:31	2	System	Camera Connection Lost				
15	2014/05/13 10:37:31	1	System	Camera Connection Lost				
16	2014/05/13 10:37:29	4	System	Camera Connection Lost				
17	2014/05/13 10:33:26	3	System	Camera Connection Resumed				
18	2014/05/13 10:33:22	3	User	Add Camera				
19	2014/05/13 10:33:21	3	User	Delete Camera				
20	2014/05/13 10:18:38	3	System	Camera Connection Lost				

Figure 3-9

To search for the changes made at specific time, click the **Filter** button  at the upper-right corner to access the following options for event filtering.

- **Time:** Set up the desired time period.
- **Device:** Select a channel.
- **Type:** Select **User** or **System**.
- **Event:** Select the desired type of event.

## Chapter 4 Video Playback

The timeline player plays back recorded video without affecting recording. There are two ways to launch the timeline player:

- On the main screen, click the **Playback** button (No. 6, Figure 2-15).
- On the camera live view, click the desired camera name and select **Instant Playback**.

On the timeline player screen, the system automatically plays back video recording from 3 minutes before the playback function is enabled.

### 4.1 Timeline Player

Without further settings you can play back the video recording by selecting desired time period and clicking the **Play** button on Playback Panel. To switch the current view mode, click the **Division** button. Here we use GV-SNVR0400F for illustration.

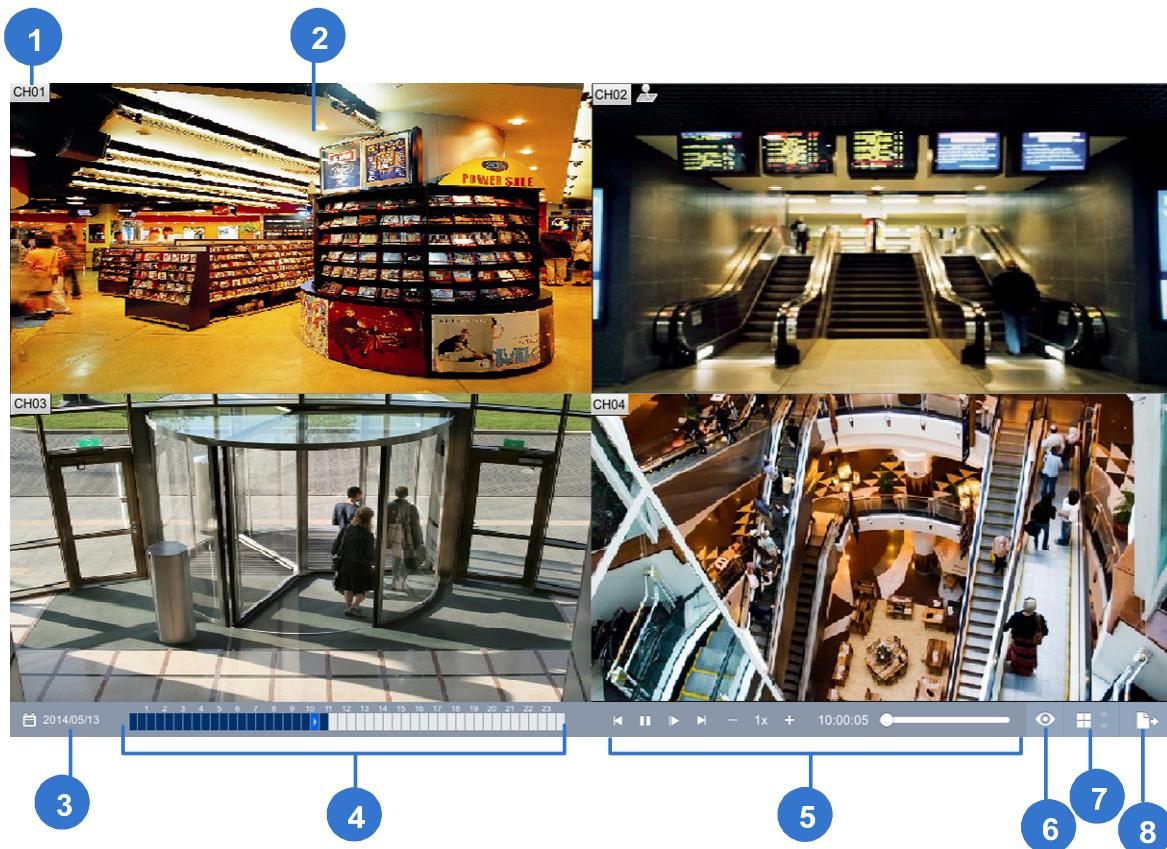
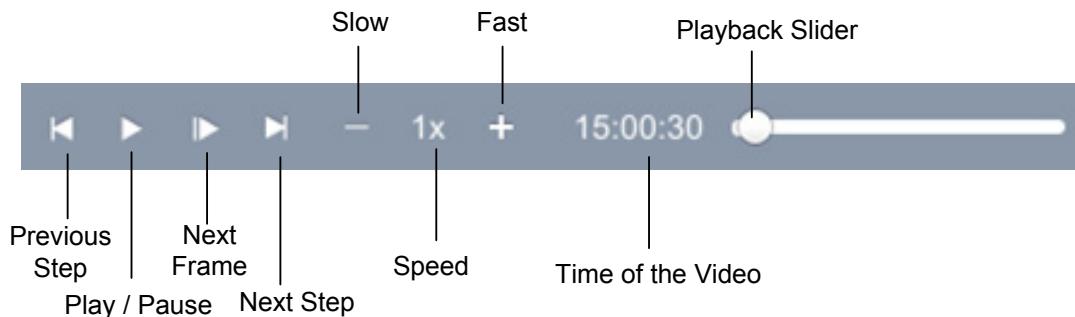


Figure 4-1

The controls in the timeline player screen:

No.	Name	Description
1	Camera Name	Indicates the camera name.
2	Camera View	Displays the playback video.
3	Date Display	Allows you to specify a date to play back the recorded video. The date with video recording is highlighted in blue.
4	Timeline	Consists of 48 grids, with each specifying half an hour. The time period with video recording is highlighted in blue.
5	Playback Panel	Contains typical playback control buttons.
6	Live	Closes the timeline player and returns to live view window.
7	Division	For GV-SNVR0400F, switches between 1-channel and 4-channel view; for GV-SNVR1600, switches between 1-channel, 4-channel, 9-channel and 16-channel view.
8	Export	Exports the video recording as AVI files to an external hard drive.

Use controls on Playback Panel to view the event in the way you want. Move the Slider forward or backward to navigate video frames.



*Figure 4-2*

## 4.2 Recording Backup

Using the timeline player, you can back up recordings to the external hard drive. To back up recordings, follow the steps below.

1. Connect an external hard drive of FAT32 format to the USB port on the unit.
2. On the timeline player screen, click **Export** (No.8, Figure 4-1).
3. Select the desired date and time period of video recording.
4. Select the channel of desired camera and click **Export**.

The video recording is exported to the external hard drive.

The backup recordings are in AVI format. To play back the recordings using Windows Media Player, you need to install GeoVision codec in the dedicated PC. Otherwise you can install the GV-ViewLog player for playback.

---

### Note:

1. The recording backup only supports video. The audio will not be included in the backup recordings.
2. For backup efficiency, it is suggested to use the external hard drive to back up recordings.
3. If the GV-SNVR is connected with more than one storage device, the video recordings will be backed up to the first storage device connected.

---

## Chapter 5 Remote Access to the GV-SNVR

Users can access the GV-SNVR through the Web browser or mobile devices installed with GV-Eye.

### 5.1 Accessing the Surveillance Images through Web Browser

To access the live view through Web interface, follow the steps below. Here we use the GV-SNVR0400F for illustration.

1. Open your Web browser and type the IP address of the GV-SNVR.

---

**Note:** To look up the IP address of GV-SNVR, see [3.3 Network](#). Optionally, run the GV-IP Device Utility to search for your GV-SNVR. For details, see [6.2 Using the GV-IP Device Utility](#).

---

2. In both Username and Password fields, type the default value **admin**.

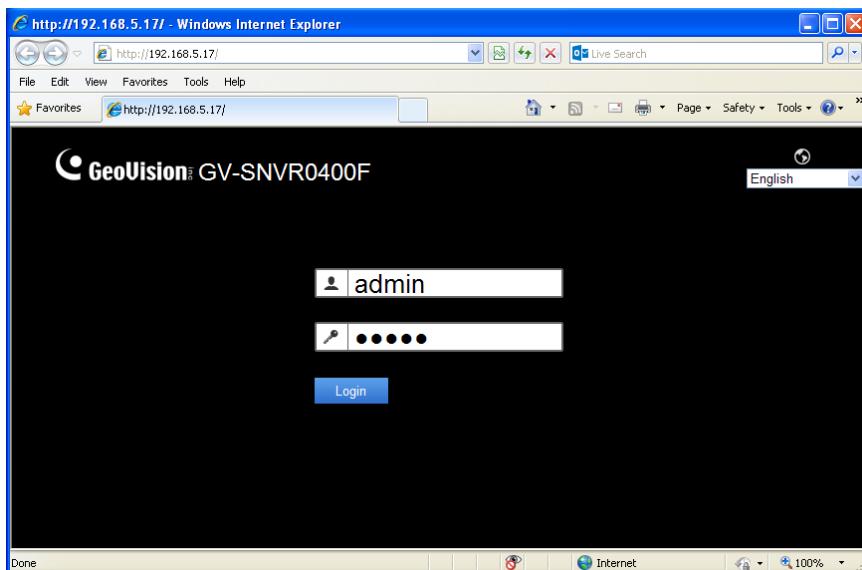


Figure 5-1

3. Select a desired language from the drop-down list at the upper-right corner for the Web interface and click **Login**.

4. To enable the update of live view on your Web browser, you must set the Web browser to allow ActiveX controls and perform a one-time installation of GeoVision's ActiveX components on your computer.

After the installation, live view will be displayed.

---

**Note:**

1. The maximum number of remote network connection is **10** in total for GV-SNVR0400F and **34** in total for GV-SNVR1600. Every connected channel will be counted as 1 connection.
2. The Web interface supports 9 languages: English, Traditional Chinese, Spanish, Russian, Portuguese, French, German, Italian and Japanese.
3. The audio function is not supported for the live view through the Web interface.

---

### 5.1.1 Live View Screen

After successfully logging in the Web interface, you can access the live view of connected IP cameras.

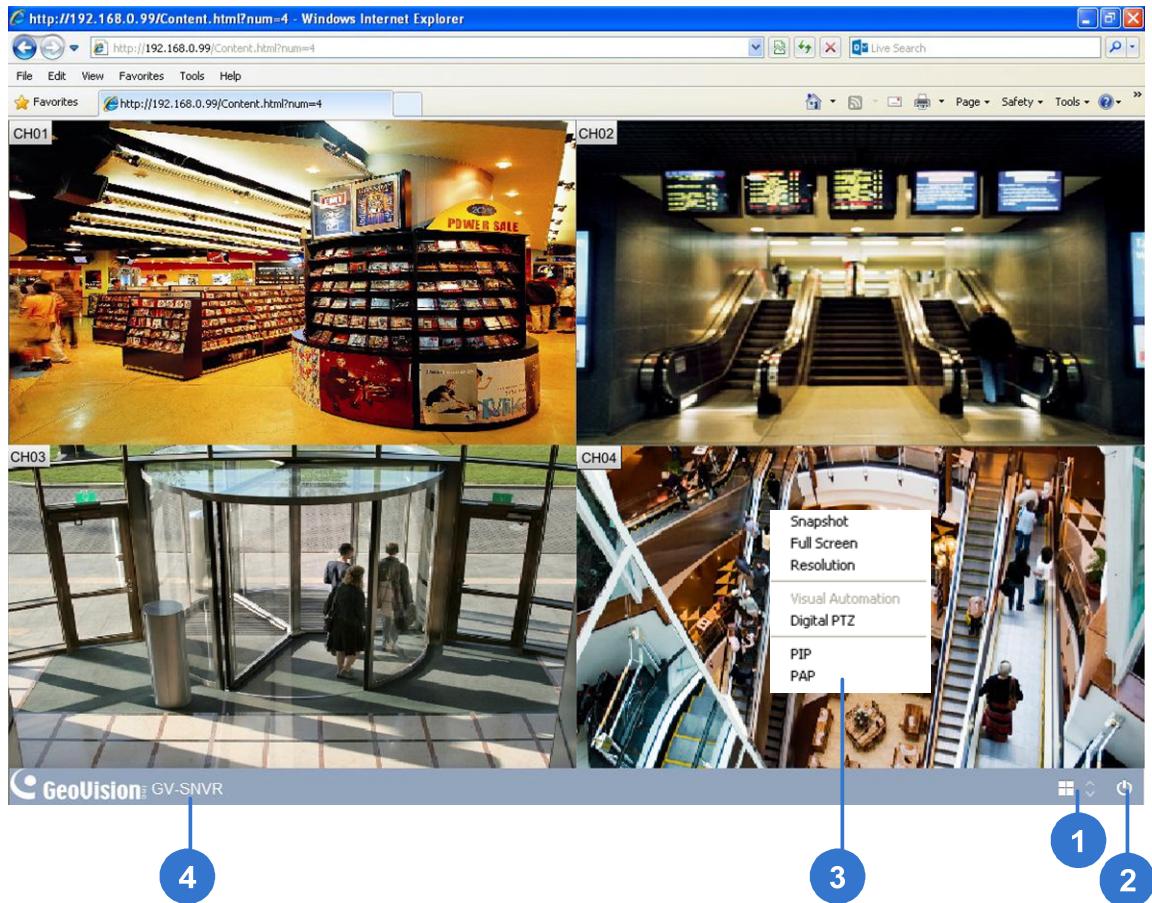


Figure 5-2

No.	Name	Description
1	Division & Page Up / Down	Selects screen divisions and switch between cameras in single division.
2	Exit	Logs out the Web interface.

No.	Name	Description
3	Advanced Options	<p>Right-click the live view of desired camera to access the functions below.</p> <p><b>Snapshot:</b> Take a snapshot of live video. For details, see <a href="#">5.1.2 Snapshot of Live Video</a>.</p> <p><b>Full Screen:</b> Switch the live view to full screen.</p> <p><b>Resolution:</b> Display the resolution at the lower-right corner of the live view.</p> <p><b>Digital PTZ:</b> Simulate the PTZ movement on the screen. For details, See <a href="#">5.1.5 Digital PTZ Control</a>.</p> <p><b>PIP:</b> Enable the PIP function. For details, See <a href="#">5.1.3 Picture-in-Picture View</a>.</p> <p><b>PAP:</b> Enable the PAP function. For details, See <a href="#">5.1.4 Picture-and-Picture View</a>.</p>
4	Device Name	Recognizes the device name.

#### Note:

1. For all GV-IP Cameras, the Web interface of GV-SNVR0400F / 1600 supports main stream for the display of full screen only. For details, see [Appendix B Live View Streaming](#).
2. The Visual Automation function is not supported.

### 5.1.2 Snapshot of Live Video

To take a snapshot of live video, follow the steps below.

1. Right-click on the live view of desired camera and select **Snapshot**. The Save As dialog box appears.

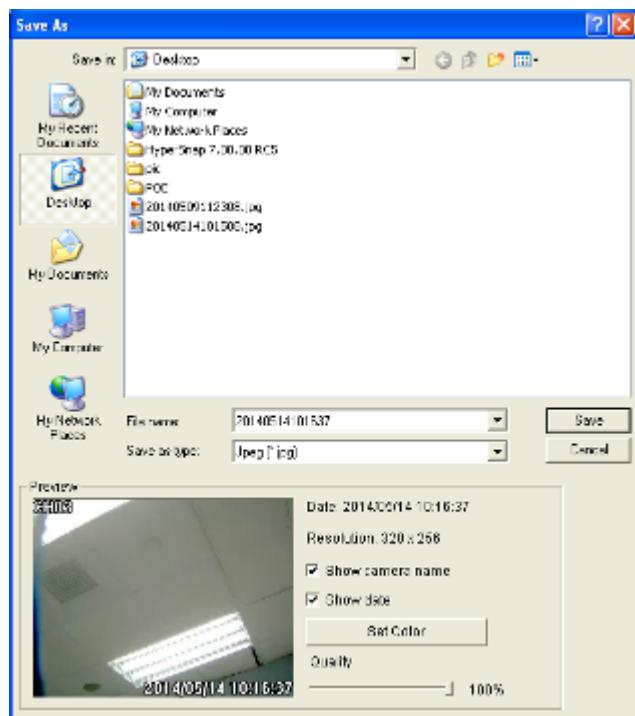


Figure 5-3

2. Select a desired saving path, type the file name and select **JPEG** or **BMP** as the Save as Type.
3. In the Preview field, you can choose whether to tag the snapshot with camera name, time and date, select **Set Color** for the text color and adjust the image quality.
4. Click **Save** to save the captured image.

---

**Note:** The resolution of captured image depends on the sub stream of connected camera.

---

### 5.1.3 Picture-in-Picture View

With the Picture in Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video. This function is useful for detailed images of the surveillance area.

1. Right-click the desired camera live view and select **PIP**. An inset window of the camera view appears in the bottom right corner.



Figure 5-4

2. Double-click the inset window. A hand icon appears.
3. Click the inset window. A navigation box appears.



Figure 5-5

4. Move the navigation box around in the inset window to have a close-up view of the selected area.
5. To adjust the navigation box size, move the cursor to any of the box corners to enlarge or diminish the box.
6. To change the frame color of the navigation box, right-click the image, select **Mega Pixel Setting** and then **Set Color of Focus Area**.
7. To exit the PIP view, right-click the camera view and click **PIP** again.

### 5.1.4 Picture-and-Picture View

With the Picture and Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. Up to 7 close-up views can be defined for clear and detailed images of the surveillance area.

1. Click the live view of desired camera and select **PAP**. A row of three inset windows appears on the bottom of the screen.



Figure 5-6

2. Draw a navigation box on the image. This selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners to enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To change the frame color of the navigation box, right-click the image, select **Mega Pixel Setting** and click **Set Color of Focus Area**.
6. To hide the navigation box on the image, right-click the image, select **Mega Pixel Setting** and click **Display Focus Area of PAP Mode**.
7. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and select **Delete**.
8. To exit the PAP view, right-click the camera view and select **PAP** again.
9. To add another navigation box when less than seven navigation boxes are drawn, right-click the camera view, select **PAP** to enter, right-click the image, select **Mega Pixel Setting** and then **Enable Add-Focus-Area-Mode**.

### 5.1.5 Digital PTZ Control

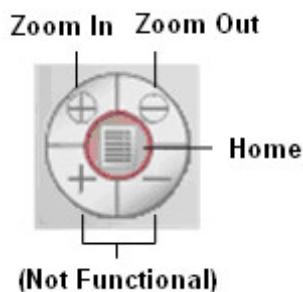
In non-PTZ cameras, the Digital PTZ (DPTZ) function allows you to simulate the PTZ movement on the screen. This function is also supported in PT / PTZ cameras.

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**Note:** The Digital PTZ function is not supported in the 16-division display.

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1. Right-click the live view and select **Digital PTZ**. In the middle of the camera view, the DPTZ control panel appears.



*Figure 5-7*

2. To zoom in or zoom out, click the corresponding buttons or use the mouse scroll. To bring the visual PTZ view back to its default image, click **Home**.
3. To pan and tilt the visual PTZ view, zoom in on the image first, and then click and hold the arrow. The arrow appears when you place the cursor in one of the eight directions, i.e. up, down, left, right, left up, left down, right up and right down.
4. To adjust the transparency level of the DPTZ control panel, right-click the camera view, find **Digital PTZ** and select **Transparency**. Ten levels range from 10% (fully transparent) to 100% (fully opaque).
5. To close the DPTZ control panel, right-click the camera view and select **Exit**.

## 5.2 Accessing the Surveillance Images through Smart Device

To access the live view of GV-SNVR through the iOS or Android devices, you must install your smart devices with GV-Eye. With GV-Eye, you can watch multiple live view in dual streams, enable the Picture in Picture (PIP) function and take snapshots from your mobile device. For details, see *GV-Eye Installation Guide*.

---

**Note:** The functions of audio, PTZ control, I/O trigger and remote playback are not supported in the GV-SNVR.

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## Chapter 6 Advanced Applications

### 6.1 Upgrading System Firmware

GeoVision periodically release the updated firmware on the Website. You can upgrade the firmware using an USB storage drive of FAT32 format.

To upgrade the firmware, follow the steps below.

1. Download the firmware file to an USB storage drive.
2. Connect the USB drive to the GV-SNVR.
3. On the main screen, click the **Setting** button  and select **System**.
4. Click the **Advanced Option** button and select **Firmware Upgrade**.
5. Find the firmware file and click **Apply**. This dialog box appears.

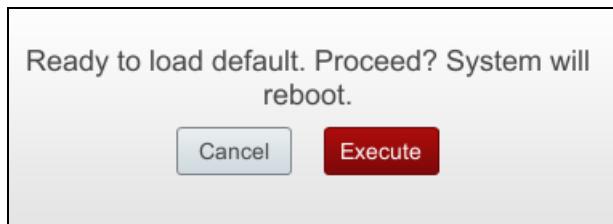


Figure 6-1

6. Click **Execute**. The system starts upgrading firmware and automatically reboots after completing the process.

After the system reboot, the main screen will be displayed automatically.

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**Note:** Optionally you can use the GV-IP Device Utility to upgrade system firmware, especially for multiple GV-SNVR. For details, see the *Upgrading System Firmware* section in [6.2 Using the GV-IP Device Utility](#).

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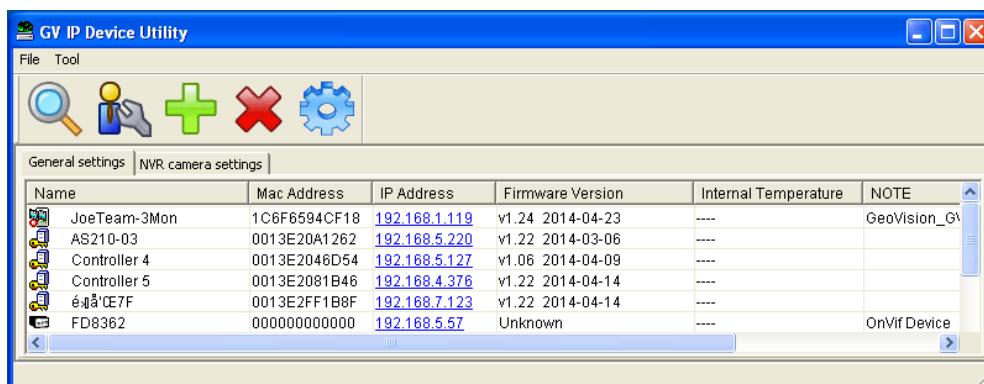
## 6.2 Using the GV-IP Device Utility

The GV-IP Device Utility detects all the GV-IP Devices in the LAN and allows you to quickly set up the IP address of the device, upgrade firmware and export/import device settings. For details, see *GV-IP Device Utility Installation Guide* on the Software CD.

### 6.2.1 Looking up the IP Address

You can use the GV-IP Device Utility to look up the IP address of your GV-SNVR and GV-IP Camera.

1. Install the GV-IP Device Utility from the Software DVD.
2. Double-click the GV-IP Device Utility icon created on your desktop. This dialog box appears.



*Figure 6-2*

3. Click the **Search** button  to locate the IP address of the GV-SNVR and GV-IP Camera under the LAN. Click the **Name** or **Mac Address** column to sort.
4. Double-click the IP device and select **Web Page** to access its Web interface.

## 6.2.2 Accessing the Live View

You can use the GV-IP Device Utility for quick access to the live view of IP cameras connected with SNVR.

1. Double-click the GV-SNVR in the list and select **Live View**.
2. Select a camera and type the username and password of the camera to access the live view.

### 6.2.3 Upgrading System Firmware

You can also use the GV-IP Device Utility to upgrade firmware of multiple GV-SNVR at the same time. Note the computer used to upgrade firmware must be under the same LAN with the GV-SNVR.

1. Double-click the GV-SNVR in the list and select **Configure**. This dialog box appears.

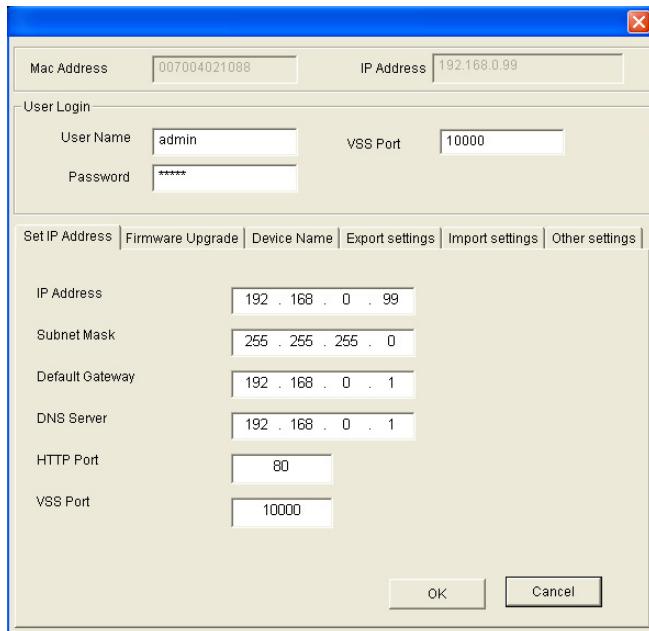


Figure 6-3

2. Click the **Firmware Upgrade** tab. This page appears.

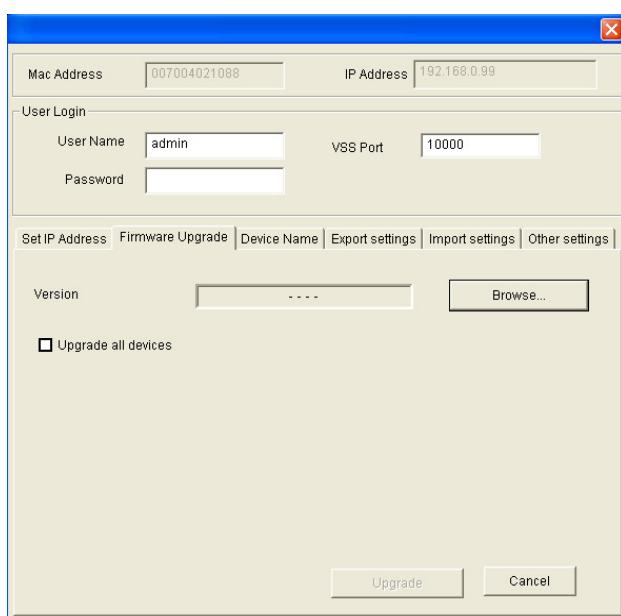


Figure 6-4

3. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
4. If you like to upgrade all the GV-SNVR in the list, select **Upgrade all devices**.
5. Type **Password**, and click **Upgrade** to start the upgrade.

#### 6.2.4 Backing up and Restoring Settings

With the GV-IP Device Utility, you can back up the configurations in the GV-SNVR and restore the backup data to the current GV-SNVR or import it to another one.

##### To back up the settings:

1. Run GV-IP Device Utility and locate the desired GV-SNVR.
2. Double-click the GV-SNVR in the list and select **Configure**. Figure 6-3 appears.
3. Click the **Export Settings** tab. This dialog box appears.

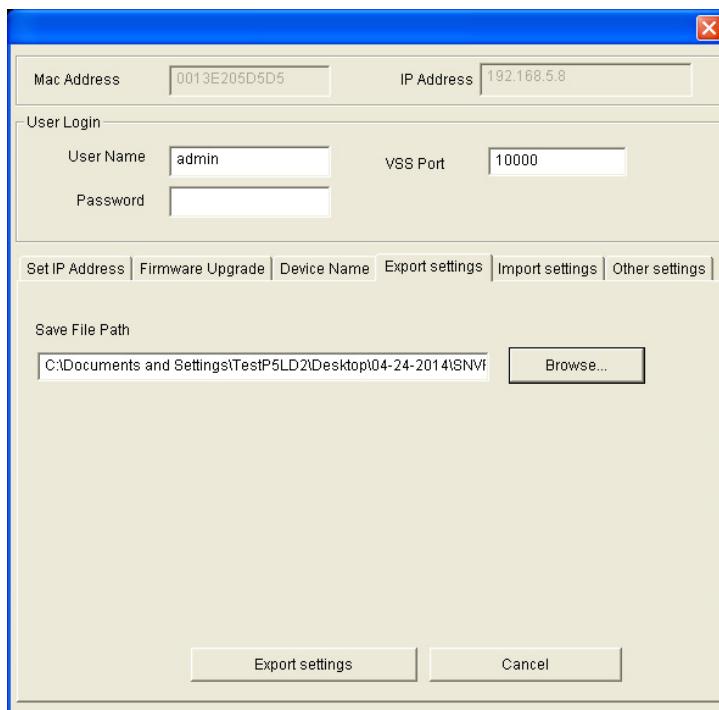


Figure 6-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click the **Export Settings** button to save the backup file.

**To restore the settings:**

1. In Figure 6-5, click the **Import Settings** tab. This dialog box appears.

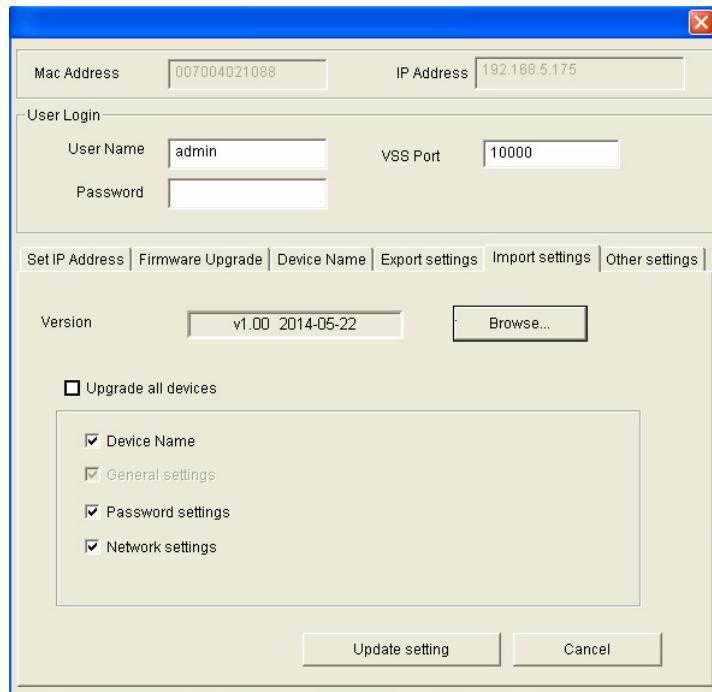


Figure 6-6

2. Click the **Browse** button to locate the backup file (.dat).
3. Select **Upgrade all devices** to import the settings into all the GV-SNVR under the same LAN. To import password settings and/or network settings, select **Password Settings** and/or **Network settings**.
4. Click the **Update Settings** button to start restoring.

## Specifications

### Hardware

Model	GV-SNVR0400F	GV-SNVR1600
<b>System</b>		
OS	Embedded Linux	
No. of Drive Bay	1 (3.5" HDD)	4 (3.5" HDD)
Power Source	Input: AC 100 ~ 230V, 50 ~ 60 Hz Output: DC 19V, 3.42A, Max. 65 W	Input: AC 100 ~ 230V, 50 ~ 60 Hz Output: Max. 100 W
<b>Mechanical</b>		
Connector	Gigabit Ethernet	1 port, RJ-45
	Video Output	HDMI
	Audio	N/A
	USB 2.0	Front: 2 ports, Rear: 2 ports
Front: 1 port, Rear: 4 ports		
<b>Note:</b> For GV-SNVR1600, when 2 Ethernet ports are used together, one is LAN port and the other is WAN port.		
LED Indicator	2 LEDs: Power, HDD Error	5 LEDs: Power, LAN, WAN, HDD Status, HDD Error
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 50°C (32°F ~ 122°F)
Humidity	0% ~ 90% RH (non-condensing)	0% ~ 80% RH (non-condensing)
Dimensions (L x W x H)	206 x 220 x 65.5 mm (8.11 x 8.66 x 2.58")	424.6 x 445 x 43.8 mm (16.72 x 17.52 x 1.72")
Net Weight	1.1 kg (2.43 lb)	4.1 kg (9.04 lb)
Regulatory	FCC, CE, RCM, RoHS compliant	

### Software

Model	GV-SNVR0400F	GV-SNVR1600
<b>Video and Audio</b>		
Video Compression	H.264	
Video Stream	Dual streams from H.264	
Video Output	720p / 1080i / 1080p (HDMI)	1080p (HDMI / VGA)
Display Division	1 / 4	1 / 4 / 9 / 16

Model	GV-SNVR0400F	GV-SNVR1600		
<b>Video and Audio</b>				
<b>Audio Compression</b>	N/A	G.711		
<b>Audio Support</b>	N/A	Yes		
<b>Two-Way Audio</b>	N/A	N/A		
<b>Operation</b>				
<b>Recording Bandwidth</b>	Max. 50 Mbps for 4 channels	Max. 100 Mbps for 16 channels		
<b>Recording Mode</b>	Round the clock / Motion Detection / Schedule Recording			
<b>Pre Recording</b>	1 ~ 10 sec.			
<b>Post Recording</b>	30 sec.			
<b>Instant Playback</b>	3 min.			
<b>Backup Type</b>	USB storage device of FAT32 format			
<b>Note:</b> For backup efficiency, it is suggested to use the external hard drive to back up recordings.				
<b>Management</b>				
<b>Language</b>	English / Traditional Chinese / Spanish / Russian / Portuguese / French / German / Italian / Japanese			
<b>Firmware Upgrade</b>	Upgrade through OSD or GV-IP Device Utility			
<b>Network</b>				
<b>Network Type</b>	LAN, WAN, Internet			
<b>Protocol</b>	DHCP, DynDNS, HTTP, NTP, TCP, UDP			
<b>System Monitoring and Recovery</b>				
<b>Power Restoration</b>	Automatic restart after power outage			
<b>Monitoring</b>	Software Watchdog			
<b>Remote Monitoring</b>				
<b>Live View</b>	Max. 10 channels connection	Max. 34 channels connection		
<b>Monitoring Environment</b>	IE, Chrome, Firefox and mobile devices			
<b>Smart Device Access</b>	GV-Eye for iOS and Android			
<b>Access from Web Browser</b>	Live View, Image Snapshot, Picture in Picture, Picture and Picture, Digital PTZ			
<b>Note:</b> All specifications are subject to change without notice.				

## Appendix

### A. Tested and Supported Hard Disk Drives

For system efficiency, it is recommended to use the enterprise-level hard disk drives instead of desktop-level or green HDD. The HDD listed below are tested by GeoVision.

Model	Capacity
<b>WD</b>	
WD4000F9YZ	4 TB
WD4000FYYZ	4 TB
WD4001FAEX	4 TB
WD40EFRX	4 TB
WD3000F9YZ	3 TB
WD3000FYYZ	3 TB
WD30EFRX	3 TB
WD30EURS	3 TB
WD30EURX	3 TB
WD2000F9YZ	2 TB
WD2000FYYZ	2 TB
WD20EURS	2 TB
WD20EZRX	2 TB
WD1003FBYZ	1 TB
WD10EURX	1 TB
<b>Seagate</b>	
ST4000NC000	4 TB
ST4000NM0033	4 TB
ST3000NM0033	3 TB
ST3000VX000	3 TB
ST2000NC000	2 TB
ST2000VX000	2 TB
ST1000DM003	1 TB
ST1000VX000	1 TB

Model	Capacity
<b>Toshiba</b>	
MG03ACA400	4 TB
DT01ABA300V	3 TB
MG03ACA300	3 TB
DT01ABA200V	2 TB
DT01ACA200	2 TB
<b>Hitachi</b>	
HUA723030ALA640	3 TB
HUS724040ALA640	4 TB
HUS724020ALA640	2 TB

## B. Live View Streaming

The default streaming for local display, Web browser and smart device access are listed below.

	Screen Display	GV-SNVR0400F	GV-SNVR1600
Local	<b>1 Division</b>	Stream 1	Stream 1
	<b>4 Divisions</b>	Stream 1	Stream 1
	<b>9 Divisions</b>	N/A	Stream 2
	<b>16 Divisions</b>	N/A	Stream 2
Webpage	<b>1 Division</b>	Stream 1	Stream 1
	<b>4 Divisions</b>	Stream 2	Stream 2
	<b>9 Divisions</b>	N/A	Stream 2
	<b>16 Divisions</b>	N/A	Stream 2
GV-Eye 2.0	<b>1 Division</b>	Stream 1	Stream 1
	<b>6 Divisions</b>	Stream 2	Stream 2